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In re Application of:
Darsillo et al.

Art Unit: 1773

Application No. 09/670,118

Examiner: K. Bernatz

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For: RECORDING MEDIUM

PENDING CLAIMS AFTER AMENDMENTS
MADE IN RESPONSE TO OFFICE ACTION DATED OCTOBER 19, 2001

1. A recording medium comprising a substrate having a glossy coating thereon, the glossy coating comprising alumina particles and a binder, wherein the alumina particles are aggregates of primary particles.

2. The recording medium of claim 1, wherein the substrate comprises a polymer or cellulose paper.

3. The recording medium of claim 1, wherein the substrate comprises poly(ethylene terephthalate).

4. The recording medium of claim 1, wherein the alumina particles are fumed alumina particles.

5. The recording medium of claim 1, wherein the aggregates have a mean diameter of less than about 1 μm.

6. The recording medium of claim 1, wherein the aggregates have a surface area of about 20-400 m^2/g.

7. The recording medium of claim 1, wherein the pigment to binder ratio is at least about 2:1 by weight.

8. A coating composition comprising alumina particles and a binder, wherein the alumina particles are aggregates of primary particles and the solids content of the alumina in the composition is at least about 10 wt.%.

9. The coating composition of claim 8, wherein the alumina particles are fumed alumina particles.

10. The coating composition of claim 8, wherein the aggregates have a mean diameter of less than about 1 μm.

11. The coating composition of claim 8, wherein the aggregates have a surface area of about 20-400 m^2/g.

12. The coating composition of claim 8, wherein the pigment to binder ratio is at least about 2:1 by weight.

13. A method of preparing a coating composition, the method comprising:

providing a colloidally stable dispersion comprising water and alumina particles, wherein the alumina particles are aggregates of primary particles and the solids content of the alumina particles in the dispersion is greater than about 20 wt.%;

adding a binder to and, optionally, diluting the colloidally stable dispersion, until a desired pigment to binder ratio and overall solids content are obtained; and

optionally adjusting the pH with a suitable acid or base.

14. The method of claim 13, wherein the alumina particles are fumed alumina particles.

15. The method of claim 13, wherein the aggregates have a mean diameter of less than about 1 μm.

16. The method of claim 13, wherein the aggregates have a surface area of about 20-400 m^2/g.

17. The method of claim 13, wherein the pigment to binder ratio is at least about 2:1 by weight.

18. The method of claim 13, wherein the solids content of the alumina particles in the colloidally stable dispersion is at least about 30 wt.%.

19. The method of claim 13, wherein the zeta potential of the alumina particles in the colloidally stable dispersion is at least about +20 mV.

20. The method of claim 13, wherein the pH of the colloidally stable dispersion is about 3-5.

21. The method of claim 13, wherein the specific gravity of the colloidally stable dispersion is about 1-2 kg/l.

22. The method of claim 13, wherein the apparent viscosity of the colloidally stable dispersion is less than about 20 cp as measured in a Hercules® High-Shear Viscometer at 4400 RPM, FF Bob measuring geometry.

23. The method of claim 13, wherein the viscosity of the colloidally stable dispersion is less than about 100 cp as measured in a Brookfield Model RV viscometer, spindle #1, after about 30 seconds at 60 RPM.

24. A coating composition prepared by the method of claim 13.

25. A method of preparing a recording medium, the method comprising:
providing a substrate;
coating the substrate with the coating composition of claim 8 to produce a substrate coated with a coating;
optionally calendering the coated substrate; and
drying the coated substrate.

26. A method of preparing a recording medium, the method comprising:
providing a substrate;
coating the substrate with the coating composition of claim 24, to produce a substrate coated with a coating;
optionally calendering the coated substrate; and
drying the coated substrate.

27. A recording medium prepared by the method of claim 25.

28. A recording medium prepared by the method of claim 26.

29. The recording medium of claim 5, wherein the aggregates have a mean diameter of about 80-300 nm.

30. The recording medium of claim 29, wherein the aggregates have a mean diameter of about 100-200 nm.

31. The recording medium of claim 6, wherein the aggregates have a surface area of about 20-200 m^2/g.

32. The recording medium of claim 31, wherein the aggregates have a surface area of about 30-80 m^2/g.

33. The recording medium of claim 32, wherein the aggregates have a surface area of about 40-60 m^2/g.

34. The coating composition of claim 10, wherein the aggregates have a mean diameter of about 80-300 nm.

35. The coating composition of claim 34, wherein the aggregates have a mean diameter of about 100-200 nm.

36. The coating composition of claim 11, wherein the aggregates have a surface area of about 20-200 m^2/g.

37. The coating composition of claim 36, wherein the aggregates have a surface area of about 30-80 m^2/g.

38. The coating composition of claim 37, wherein the aggregates have a surface area of about 40-60 m^2/g.

39. The method of claim 15, wherein the aggregates have a mean diameter of about 80-300 nm.

40. The method of claim 39, wherein the aggregates have a mean diameter of about 100-200 nm.

41. The method of claim 16, wherein the aggregates have a surface area of about 20-200 m^2/g.

42. The method of claim 41, wherein the aggregates have a surface area of about 30-80 m^2/g.

43. The method of claim 42, wherein the aggregates have a surface area of about 40-60 m^2/g.